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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,950	12/30/2003	Roger M. Ikeda	TI-37410 (032350.B582)	7897

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EXAMINER	
KOZIOL, STEPHEN R	
ART UNIT	PAPER NUMBER
2609	

NOTIFICATION DATE	DELIVERY MODE
07/06/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/748,950	IKEDA, ROGER M.	
	Examiner	Art Unit	
	Stephen R. Koziol	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/30/2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12302003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims (1-3, 5, 7-9, 11, 17-18, and 20) are rejected under 35 U.S.C. 102(b) as being anticipated by Kurematsu US 2002/0105621 A1, hereinafter, Kurematsu.

Regarding claim 1, Kurematsu teaches a control module for use in an image display system (Abstract, fig. 1), comprising:

i. a histogram module operable to collect data associated with a first frame of a signal received by the control module, the histogram module comprising a plurality of bins capable of counting a plurality of pixels associated with the first frame, wherein each of the plurality of pixels comprises a maximum intensity component at a particular color level (fig 4A-B, fig 5A-B, also, par. 0074, where the maximum intensity component is Kurematsu's "maximum luminance"); and

ii. a processor capable of determining a new position of an adjustable aperture (projection light amount means) based at least in part on the data collected by the histogram module (fig 1 item 20 acts as the aperture adjusting processor, also par 0082 teaches "the amount of projection light is controlled in conformity with the maximum luminance level of the

input signal"), the processor further capable of determining a gain to apply to a subsequent frame of the signal based at least in part on the new adjustable aperture position (par 0080, where gain, or "amplify the signal," is applied in response to change in the amount of projected light).

Regarding claim 2, Kurematsu teaches a control module for use in an image display system (Abstract, fig. 1) wherein the processor determines the position of the adjustable aperture based at least in part on the data collected by the histogram module (fig 4A-B and fig 5A-B, also, par 0074) and on a parameter associated with a number of clipped pixels (fig 4A-B and fig 5A-B, also, par 0074, where Kurematsu sets a maximum luminance level based on the histogram, and pixels above said maximum luminance value are thus "clipped").

Regarding claim 3, Kurematsu teaches a control module for use in an image display system (Abstract, fig. 1) wherein the parameter associated with the number of clipped pixels comprises no more than a small fraction of the total number of pixels with a modulator (fig 4A-B and fig 5A-B, also, par 0074, where Kurematsu's maximum luminance, and consequently total number of clipped pixels, is five percent).

Regarding claim 5, Kurematsu teaches a control module for use in an image display system (Abstract, fig. 1) wherein the adjustable aperture selectively varies an amount of light transmitted along a projection path Fig 1 item 20, also, par 0068).

Regarding claim 7, Kurematsu teaches a control module for use in an image display system (Abstract, fig. 1) wherein the processor determines a new position of the adjustable aperture based on a step size to move the adjustable aperture and a target aperture position (fig 1 item 20, also, pars 0079-0080).

Regarding claim 8, Kurematsu teaches a control module for use in an image display system (Abstract, fig. 1) further comprising:

i. a memory coupled to the processor and capable of storing data associated with an image intensity algorithm (pars 0074 and 0096-0097);

ii. a video processing module coupled to the histogram module and capable of processing the received signal on a frame-by-frame basis (fig 1 item 30, also, par 0072 & 0073, where Kurematsu's control signal generating means is responsible for processing the received input signal on a frame-by-frame basis); and

iii. a gain module coupled to the video processing module and the processor, the gain module capable applying the gain to the subsequent frame received by the control module (fig 1 item P, also, par 0080 where gain, or "amplify the signal," is applied in response to change in the amount of projected light).

Regarding claim 9, Kurematsu teaches a method of controlling a position of an aperture in an image display system (Abstract, fig 1), comprising:

i. determining a target aperture position based at least in part on a parameter associated with a number of clipped pixels and data stored in a histogram, wherein the data stored in

the histogram comprises data of a first frame (figs 4A-B and 5A-B, also, pars 0074 and 0082 where "the amount of projection light is controlled in conformity with the maximum luminance level of the input signal" which is determined by the histogram data);

ii. determining a step size to move the aperture based at least in part on a current background storage module and a magnitude of a difference between the target aperture position and a current aperture position (fig 1, also, pars 0079-0080, where a luminance level of 255 acts as the background storage module value for the light modulating element P, and the difference between the target aperture position and a current aperture position is controlled by said light modulating element P); and

iii. determining a gain to apply to a subsequent frame based at least in part on a new aperture position, wherein the new aperture position is based at least in part on the current aperture position and the step size to move the aperture (pars 0072-0073 and 0080, where the luminance, and thus aperture positions, of a succession of input frames is compared.)

Claim 11 has been analyzed and is rejected with respect to the discussion in claim 3 above, as the limitation in claim 11 are identical to the limitations in claim 3, despite those limitations manifesting in method form in claim 11 as opposed to apparatus form in claim 3.

Regarding claim 17, Kurematsu teaches a control module for use in an image display system, comprising (Abstract, fig 1):

i. a processor capable of determining a new position of an adjustable aperture based at least in part on a step size to move the adjustable aperture and a target aperture position, wherein the target aperture position is based at least in part on data of a first frame received by the control module (fig 1 item 20 acts as the aperture adjusting processor, also par 0082 teaches "the amount of projection light is controlled in conformity with the maximum luminance level of the input signal"); and

ii. a gain module coupled to the processor, the gain module capable applying a gain to a subsequent frame received by the control module, wherein the amount of gain applied to the subsequent frame is based at least in part on the new adjustable aperture position (fig 1 item P, also, par 0080 where gain, or "amplify the signal," is applied in response to the new adjustable aperture position or, "change in the amount of projected light").

Regarding claim 18, Kurematsu teaches a control module for use in an image display system (Abstract, fig 1) wherein the processor is further capable of determining a gain to apply to a subsequent frame based at least in part on the new adjustable aperture position (fig 1 item P, also, par 0080 where gain, or "amplify the signal," is applied in response to the new adjustable aperture position or, "change in the amount of projected light").

Regarding claim 20, Kurematsu teaches a control module for use in an image display system (Abstract, fig 1) wherein the processor determines the target aperture position based at least in part on the data collected by a histogram (fig 4A-B and fig 5A-B, also, par 0074) and on a parameter associated with a number of clipped pixels (fig 4A-B and fig 5A-B, also, par 0074, where Kurematsu sets a maximum luminance level based on the histogram, and pixels above said maximum luminance value are thus "clipped").

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims (4, 10, 14-15) are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurematsu US 2002/0105621 A1 in view of Tintera US 5,745,808, hereinafter, Tintera.

Regarding claim 4, Kurematsu in view of Tintera as a whole teaches a control module for use in an image display system (Kurematsu, Abstract, fig. 1) wherein the processor determines the gain to apply to the subsequent frame (Kurematsu, fig 6A-B, also pars 0082-0083, and, 0096-0097). Kurematsu does not explicitly state the gain to be applied to the subsequent frame is performed by accessing an aperture position to gain table. However, Tintera does teach the gain applied to subsequent frames is performed by accessing an aperture position to gain table (Tintera, fig. 3A-

B and fig. 6, also, col. 3, ln. 55-67). Taking the combined teaching of Kurematsu and Tintera as a whole, it would have been obvious to modify the disclosed aperture position to gain relationship of Kurematsu to the form of the aperture position to gain table of Tintera for the benefit of automating gain control in an image display system.

Regarding claim 10 Kurematsu in view of Tintera as a whole teaches a method of controlling a position of an aperture in an image display system (Kurematsu, Abstract, fig 1) wherein determining the target aperture position comprises:

i. determining a histogram storage module that contains a pixel equaling the parameter associated with the number of clipped pixels (Kurematsu, fig 4A-B and fig 5A-B, also, par 0074, where Kurematsu sets a maximum luminance level parameter based on the histogram, and pixels above said maximum luminance parameter value are thus "clipped" pixels); and

ii. accessing a target aperture position table based on the histogram storage module that contains the pixel equaling the parameter associated with the number of clipped pixels (see claim 4 discussion).

Claim 14 has been analyzed and is rejected with respect to the discussion in claim 4 above, as the limitation in claim 14 are identical to the limitations in claim 4 supra.

Regarding claim 15, Kurematsu in view of Tintera as a whole teaches a method of controlling a position of an aperture in an image display system (Kurematsu, Abstract, fig 1) wherein the

aperture position to gain table (see claim 4 discussion) comprises 256 positions (Kurematsu, par. 0074, where 0-255 aperture position stops are disclosed). Taking the combined teaching of Kurematsu and Tintera as a whole, it would have been obvious to modify the disclosed aperture position to gain table of Tintera to include the 256 positions taught by Kurematsu.

5. Claims (13 and 16) are rejected under 35 U.S.C. 103(a) as being unpatentable Kurematsu US 2002/0105621 A1 in view of Kondo et al. US 5,258,848, hereinafter, Kondo.

Regarding claim 13 Kurematsu in view of Kondo as a whole teaches a method of controlling a position of an aperture in an image display system (Kurematsu, Abstract, fig 1) wherein determining the step size to move the aperture comprises:

i. determining a histogram storage module that contains a pixel equaling a background pixel value and storing that histogram storage module as the current background storage module (Kurematsu fig 1, also, pars 0079-0080, where a luminance level of 255 acts as the background storage module value for the light modulating element P);

ii. determining a magnitude of a difference between the current background storage module and a preceding background storage module (Kurematsu, fig 1, also, pars 0079-0080, where a luminance level of 255 acts as the background storage module value for the light modulating element P, and the difference between the target aperture position and a current aperture position is controlled by said light modulating element P);

Kurematsu dose not explicitly teach, however Kondo does teach:

iii. if the magnitude of the difference between the current background storage module and the preceding background storage module exceeds a large storage module change threshold, setting the aperture step size to a maximum movement value (Kondo, fig. 2 (item 13) and fig. 3, also, col. 3, ln. 40-51,where Kondo teaches the aperture step size is set to a maximum movement value when a large storage module change threshold is exceeded) ;

iv. otherwise: determining the magnitude of the difference between the current aperture position and the target aperture position (Kondo, col. 3, ln. 18-40);

v. if the magnitude of the difference between the current aperture position and the target aperture position exceeds a large aperture movement threshold, setting the aperture step size to a large movement value (Kondo, fig. 2 item 6, and fig 3, also, col. 3, ln. 40-51);

vi. otherwise setting the aperture step size to a minimum movement value (Kondo, fig. 2 item 6, and fig 3, also, col. 3, ln. 40-51).

Taking the combined teaching of Kurematsu and Kondo as a whole, it would have been obvious to modify the disclosed aperture position to gain relationship control of Kurematsu with that of Kondo for the benefit of automating gain control in an image display system.

Regarding claim 16, Kurematsu in view of Kondo as a whole teaches a method of controlling a position of an aperture in an image display system (Kurematsu, Abstract, fig 1) further comprising:

i. comparing the new aperture position to the target aperture position (Kondo, col. 3, ln. 18-40); and

ii. determining whether the new aperture position will exceed the target aperture position (Kondo, fig. 2 (item 13) and fig. 3, also, col. 3, ln. 40-51;

iii. if the new aperture position will exceed the target aperture position, then limit the step size to move the aperture to a limited step size to prevent the new aperture position from exceeding the target aperture position (Kondo, fig. 2 (item 13) and fig. 3, also, col. 3, ln. 40-51, and, col. 4, ln. 60-67 cont' col. 5, ln. 1-8);

iv. otherwise move the aperture based on the step size (Kondo, fig. 2 (item 13) and fig. 3, also, col. 3, ln. 40-51, and, col. 4, ln. 60-67 cont' col. 5, ln. 1-8).

Taking the combined teaching of Kurematsu and Kondo as a whole, it would have been obvious to modify the disclosed aperture position to gain relationship control of Kurematsu with that of Kondo for the benefit of automating gain control in an image display system.

6. Claims (6, 12, and 19) are rejected under 35 U.S.C. 103(a) as being unpatentable Kurematsu US 2002/0105621 A1.

Regarding claim 6, Kurematsu teaches a control module for use in an image display system (Abstract, fig. 1) wherein the histogram storage modules operate to count the maximum intensity component of a particular color level (fig. 4A-B, par. 0073-0074). Kurematsu does not teach the

histogram storage module comprises exactly thirty-two storage modules. However, Official Notice is taken to note that based on the amount of processed histograms needed to be stored in Kurematsu's disclosed histogram storage modules (par. 0073-0074), it would have been obvious, practical, and desirable for one of ordinary skill in the art at the time of the invention to modify Kurematsu's number of histogram storage modules within a range including thirty-two histogram storage modules for the benefit of counting the maximum intensity component of a particular color level.

Claims 12 and 19 have been analyzed and are rejected with respect to the discussion in claim 6 above, as the limitation in claims 12 and 19 are identical to the limitations in claim 6 supra.

Examiner's Note

7. The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Contact

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Koziol whose telephone number is (571) 270-1884. The examiner can normally be reached on M - alt. F 8:00-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on (571) 272-7332. Customer Service can be reached at (571) 272-2600. The fax number for the organization where this application or proceeding is assigned is (571) 273-7332.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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